

- Sub 83*  
*Al Cont*
21. A catalyst system according to claim 20 wherein the two cyclic groups of the metallocene are not bonded to each other.
22. A catalyst system according to claim 20 wherein the two cyclic dienyl groups of the metallocene are bonded to each other.

### REMARKS

It is respectfully requested that the restriction requirement be reconsidered and withdrawn. The elected claims are drawn to a catalyst system. The non-elected claims 11-18 are directed to an olefin polymerization process which employs the catalyst system of claim 1-10. Obviously the polymerization process as claimed cannot be practiced with a materially different product or else the process would not be what was being claimed. Accordingly, it is submitted that these claims should be examined together. It is submitted that the scope of search for both the catalyst system and the polymerization process should be the same and thus should not impose any undue burden on the Patent Office.

In regard to paragraph 5 of the Office Action, the undersigned attorney hereby acknowledges that when the term "system" was used, the term was being used to refer to a "composition".

In regard to the 112 rejection of paragraph 6, the above amendment has amended claim 1 to specify that the metallocenes are metallocenes of metals of

groups IVB, VB, and VIB. Accordingly, it is submitted that that rejection has been overcome.

The 112 rejection of claim 6 has also been overcome by making the correction suggested by the Examiner.

The applicant's elected claims were rejected as being obvious over U.S. 5,444,145 (Brant et al.) and U.S. 5,529,966 (Luciani et al.). While each of those references discloses a polymerization process using a metallocene having dialkyl amido groups bonded to the metal of the metallocene, as recognized by the Examiner, neither of those references disclose a metallocene having a mono organo amido group bonded to the metal.

It is submitted that in a case like this where there are differences between the subject matter sought to be patented and the subject matter taught in the prior art, it is improper for the Patent Office to merely allege that such differences are obvious. See *In re Soli* 137 USPQ 797, 801 (CCPA 1963).

Neither of these references provide any suggestion whatsoever that a mono hydrocarbyl amido functional group would be equivalent to a dialkyl amido functional group. Accordingly, it is submitted that no prima facie case of obviousness has been made out.

It is further submitted that this is not even a case where it could be argued that the cited art provides some suggestion to try what the applicant is

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currently claiming. On the contrary, it is submitted that these two references would cause those skilled in the art to assume that one could not replace the dihydrocarbyl amido functional groups of the references with a mono hydrocarbyl amido functional group. Clearly, if the inventors in those references had considered mono hydrocarbyl amido groups to be equivalent to dihydrocarbyl amido groups, they would have had their patent attorney write those applications in a broader manner. The fact that they were not so written is prima facie evidence for the fact that those inventors did not consider it obvious that one could replace the dihydrocarbyl amido groups with mono hydrocarbyl amido groups.

Note that the Court of Appeals for the Federal Circuit has stated "... we have concluded that generalization should be avoided insofar as specific chemical structures are alleged to be prima facie obvious one from the other." See *In re Biak* 226 USPQ 870, 872 (CAFC 1985).

It is further submitted that it does not seem correct in this case to even assume that a mono-hydrocarbyl amido group should be considered chemically very similar to a dihydrocarbyl amido group. Note that in a mono-hydrocarbyl amido group there is a nitrogen hydrogen bond. In some circumstances such as when the hydrocarbyl group is an aryl group, the hydrogen would be a very acidic hydrogen that would be easily replaced. This is the point that was trying to be explained in the paragraph overlapping pages 2 and 3 of the specification. The

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4. Comm. pp. 8731-8732

Walsh reference J.Am.Chem.Soc., 110 (26), 8729-8732 (1988) would lead one skilled in the art to believe that if a hydrogen was removed there would be an imido complex formed or a bis amide such as the compound of Fig. 2(a) of that reference.

no such figure  
Opt. of scheme 5

None of the publications of record provide any indication that a bis amide or a metallocene imido compound would function equivalent to a metallocene having dihydrocarbyl amide groups.

Provided herewith is a copy of pages 230-232 of a publication entitled *METALLOCENES - AN INTRODUCTION TO SANDWICH COMPLEXES* by Nicholas J. Long. He notes that the generally accepted theory of the mechanism for olefin polymerization is that the alkyl aluminum extracts one of the non-cyclodienyl groups of the metallocene to produce a cationic intermediate which in turn reacts with the olefin. See scheme 6.2 on page 231 and 6.3 on page 232.

It is submitted therefore that one skilled in the art looking at the disclosures of the Brant et al. and Luciani et al. publications would have assumed that in those cases the metallocenes having dihydrocarbyl amido groups were effective as olefin polymerization catalysts because the alkyl aluminum resulted in an abstraction of one of the dihydrocarbyl amido groups to result in the cation. No art has been cited which provides any basis for assuming that the same sort of thing would occur if the metallocene has mono-hydrocarbyl amido groups bonded to the metal rather than dihydrocarbyl amido groups.

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In view of the foregoing amendments and remarks, it is submitted that this application should now be in condition for allowance. Reconsideration and allowance are respectfully requested.

Respectfully submitted

RICHMOND, HITCHCOCK,  
FISH & DOLLAR

By *Edward L. Bowman*  
Edward L. Bowman  
Registration No. 27,116

ELB:gb  
Attachment

RICHMOND, HITCHCOCK,  
FISH & DOLLAR  
P.O. Box 2443  
Bartlesville, Oklahoma 74005  
1-918-661-0526

C E R T I F I C A T E   O F   M A I L I N G

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on

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(Date)

*Edward L. Bowman*

Edward L. Bowman

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